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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/667,268	09/19/2003	Steven J. Fiore	D/A3196	6042

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EXAMINER	
LEE, PETER	
ART UNIT	**PAPER NUMBER**
2852	

DATE MAILED: 04/28/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/667,268	FIORE ET AL.	
	Examiner	Art Unit	
	Peter Lee	2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 March 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,14,15 and 17* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7,14,15 and 17* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *19 September 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *3/7/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1, 3, 5-7, 14-15, and 17 are rejected under 35 U.S.C. 102(b) as being anticipated by Lee (US pn 6185394).

Lee teaches a method for preventing the shortening of the lifetime of a photoreceptor belt by adjusting the tension of an endless belt type photoreceptor belt in a printing apparatus (Fig. 1 col. 2 lines 40-55) (ie. extending/increasing the lifetime of the photoreceptor belt). Lee teaches a tension adjusting (part 300; col. 6 lines 35-67) device using a driving roller and backup roller (Fig. 1 parts 20 and 30 respectively) to wrap the photoreceptor belt around for support. Lee also teaches the tension adjusting device having a main frame (Fig. 5 part 1) (ie. support for belt), a tension roller (Fig. 5 part 40) (ie. tensioning member), and an auxiliary frame (fig. 5 part 410) (ie. biasing means) having springs attached to one end (fig. 5 part 442) (ie. spring loaded mechanism) for pushing and pulling the tension roller into and out of tension. The method taught comprises of a control mechanism operated in three modes depending on a sensing mechanism (Fig. 5 part 470) used to control the driving motor that adjusts the photoreceptor belt tension automatically (Fig. 5 part 460) (ie. tension/de-tension photoreceptor belt automatically). The first normal print mode is used for regular printing operations and ensure that the required printing tension is applied to the photoreceptor belt (col. 7 lines 19-34) (ie. tensioning the belt to an

operational tension). The second mode (ie. idle state) is a loosened tension mode activated due to the suspension of the printing operation (col. 7 lines 35-55) (ie. belt is de-tensioned to a reduced tension that is greater than zero but less than full operating tension), it is during this second state that the auxiliary frame is moved in a direction D (fig 5) so as to lessen the tension in the belt, and therefor the tension spring (col. 7 lines 35-55); Lee teaches that during such a loosened tension mode, the photoreceptor belt is not loosened enough for the belt to contact any of the surrounding units (col. 5 lines 44-48) (ie. reduced tension is sufficient to prevent the surface of belt from contacting other components); The third mode is a belt replace mode (ie. also can be seen as an idle state when no image formation is done) in which the auxiliary frame is again moved in a direction to remove pressure applied to the tension spring (col. 5 lines 52-65).

The tension adjusting mechanism of the tension adjusting device comprises: a fixed frame (fig. 5 part 420) (ie. a frame connected to the support apparatus), a circular rotary plate (fig. 5 part 450) (ie. a cam connected to frame), a first rocking member (fig. 5 part 430a) (ie. first lever arm) having one end connected to a slot (fig. 5 part 431) and the second end connected to the said auxiliary frame (ie. first and second ends), the first rocking member is also connected to the said fixed frame by a hinge pin (fig. 5 part 421a) (ie. connected pivotally). Lee also teaches the spring (part 343) to be integrated with the auxiliary frame (part 410) (ie. first and second sleeves) for applying a pressure force to the tensioning roller (part 40) (ie. first/second spring loaded mechanism and a first/second sleeve for transmitting a biasing force to the tensioning member). During a belt replace mode operation, the circular rotary plate rotates clockwise, causing the rocking member (fig. 5 part 430a) to move up and rotate about the hinge (fig. 5 part 421a); as a consequence the auxiliary frame, through the bias force caused by the spring (part 40)

coupled around the guide bar (part 330), and the tension roller will be caused to move in the direction D as seen in Fig. 5 to effectively remove all of the applied tension (col. 7 lines 58-67) (ie. cam causes first lever arm to pivot about point such that biasing means no longer acts on the tensioning member).

The tension adjusting device taught by Lee also includes a second rocking member (fig. 5 part 430b) (ie. second lever arm) connected to the first rocking member by a coupling pin (fig. 5 part 451). The second rocking member mirrors the first rocking member in operation and layout as discussed above. Also, the first and second rocking members are taught to have springs (fig. 5 part 442) attached to the ends of the rocking members at one end (col. 6 lines 40-45) (ie. first and second lever arms engage the spring loaded mechanisms at their second end).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Rosati (US pn 4416532).

Lee teaches al of the limitations pertaining to the claim from which 2 depends upon.

Lee does not teach the photoreceptor belt being de-tensioned manually.

Rosati teaches the use of a lever member (fig. 6 part 86; note col. 5 lines 5265), in a similar tension adjusting device, to be manually adjusted to release and increase the tension in a continuous photoconductive belt (Fig. 2 part 20).

It would have been obvious to a person of ordinary skill in the art at the time the invention was made to have the manually adjustable lever found in Rosati attached to the rotary plate in order to coordinate the tension adjustment in the tension adjusting device taught by Lee. One of ordinary skill in the art would have been motivated to include such a lever to simplify the image forming apparatus by ridding it of excessive mechanisms and controls that will serve the same purpose of releasing the belt tension. By simplifying the apparatus, it will result in easier access to the photoconductive belt at a time for replacement (col. 2 lines 46-57).

3. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lee in view of Yu et al. (US pn 6101353). Lee teaches all of the limitations as set forth above. Lee further teaches the tension adjusting device of his invention having a mode in which printing is suspended, a belt replace mode (col. 7 lines 57-66), where all tension is released from the photoreceptor belt (ie. idle tension is zero).

Lee doesn't teach the device going into an idle/non-printing mode after a fixed period of time.

Yu further teaches a controller (Fig. 2 part 29) that operates through a clock (Fig. 2 part 24) that controls the actuation of the stepper motor (Fig. 2 part 150) that will adjust the tension in the photoreceptor belt (col. 5 lines 40-54). Yu also teaches that the controller and clock combination will de-tension the photoreceptor belt into a standby energy saving mode once all

the copies have been made (col. 6 lines 44-48) (ie. automatically de-tension belt after a fixed period of time after last print job finish), and then re-tension the same belt once printing is required again (col. 5 lines 45-54) (ie. automatically increase tension in belt to operating tension). The said clock through which the controller must operate through is known to be used to precisely measure out time periods for operation.

It would have been obvious to a person of ordinary skill at the time the invention was made to have integrated the clock device as taught by Yu into a tension adjusting device taught by Lee, where the clock would be used in conjunction with a controller to adjust a tension in a photoreceptor belt according to the operational state of the overall image creating apparatus. One of ordinary skill in the art would have been motivated to include the clock in order to ensure precise time period measurements, and also to include such added features as being able to de-tension the photoreceptor belt during times where it is known the image creating apparatus will not be in use such as at the end of daily use, weekends, or non-working days (abstract2nd sentence). By de-tensioning the belt during non-operation, it is known to decrease the fatigue of the belt (col. 6 lines 46-47).

Response to Amendment

Amendments to the specification and claims have been entered. IDS mailed 3/7/2005 has been considered.

Conclusion

4. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Response to Arguments

5. Applicant's arguments, see p. 6 of arguments, filed 2 March 2005, with respect to the rejection(s)of claim(s) 1, 3, 5-8, 13-18 under 35USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the same prior art reference of Lee (US 6185394). Applicants newly added limitation of removing a spring loaded force to tensioning

member during an idle state is taught by Lee. Examiner believes that the newly added limitation by the applicant added by amendment is now more clearly explained by the newly modified to teach how the teachings of Lee read upon the limitations of the applicant.

6. Applicant's arguments, see page 7, filed 2 March 2005, with respect to the rejection(s)of claim(s) 14, 15, and 17 under USC 102(b) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of the same prior art reference of Lee. The applicant has added the new limitation of a "sleeve" member being used in conjunction with a spring biasing member to apply a bias force upon a tensioning member. This limitation of a "sleeve" member has been mentioned in the previous non-final rejection, and now the current final rejection has been modified to more clearly show how the reference of Lee teaches the limitations of the applicant.

7. In response to the rejections of claims 2 and 4 under 35 USC 103(a), applicant has stated that not all limitations of claims from which the claims 2 and 4 depend upon have been taught by the references cited. However, the rejections have now been modified as mentioned above to more clearly state the teachings of Lee to meet the new claim limitations of the applicant.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Peter Lee whose telephone number is 571-272-2846. The examiner can normally be reached on mon-fri 9:00 am-5:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on 571-272-2136. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

PL 4/18/2005

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